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10/594,422

09/26/2006

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EXAMINER

CARTER, MICHAEL W

ART UNIT

PAPER NUMBER

2828

MAIL DATE

DELIVERY MODE

08/14/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/594,422 | Applicant(s) KITANO ET AL. | |
| | Examiner MICHAEL CARTER | Art Unit 2828 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. **Claims 1-4, 6-9, and 14-15** remain rejected under 35 U.S.C. 103(a) as being unpatentable over Kawagoe, US PG Pub 2004/0124500 (hereinafter referred to as Kawagoe) in view of Norihiro et al. JP Patent 5-190980 (hereinafter referred to as Norihiro) according to the previous office action.
3. **For claims 1-2 and 4**, Kawagoe further teaches the semiconductor laser is a stacked structure (figure 1) and Norihiro further teaches the insulative region is present remote from at least a portion of an edge of the semiconductor stacked structure when viewed in plan (figure 1). In figure 1, the uninsulated portion of the emitting edge between the two implanted regions 8 shows the insulative region is remote from at least a portion of an edge.
4. **For claim 8**, the combination further teaches the first electrode (Kawagoe, figure 1, label 120 and Norihiro, figure 1, label 9) is formed in contact with the surface of the waveguide region (Kawagoe, figure 1, label 111) so as to cover a part of the embedded insulation pad (Kawagoe, figure 1, label 162) a pad electrode is formed in contact with the first electrode so as to cover a part of the protective insulation film (figure 1, label 122) and the insulative region for reducing the capacitance of the element includes a region below the first electrode or the pad electrode embedded insulation film (figure 1 of both Kawagoe and Norihiro).

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5. **For claim 14**, the prior art is applied according to the previous office action.

Kawagoe further teaches the uninsulated portion of the emitting edge between the two implanted regions, 8, shows the insulative region is remote from at least a portion of an edge.

6. **For claim 15**, the art is applied according to the rejection of claim 8.

7. **For claim 16**, Norihiro further teaches the insulative region for reducing the capacitance of the element is present remote from a resonance surface of the semiconductor laser. Paragraph [0006], 2) states that O^+ ions are injected using the SiO_2 stripe as a mask. The mask covers the center portion of the laser and O^+ is therefore deposited down the sides of the mask. Portions of the deposition are remote from the resonance surface.

8. **For claim 17-19 and 21**, the prior art does not explicitly teach the semiconductor stacked structure is rectangular when viewed in plan. However, it is a standard design to form a ridge waveguide laser with a rectangular structure when viewed in plan. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form a rectangular structure to form an edge emitting device. See for example Nagashima et al. US Patent 6,697,407 (hereinafter referred to as Nagashima) figure 4c. While Nagashima does not show the full structure in plan, it would have been obvious to one of ordinary skill in the art that there is a matching back surface which forms the laser cavity.

9. **For claims 3, 6-7, and 9** the prior art is further applied according to the previous office action.

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10. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawagoe, in view of Norihiro, and further in view of Komori et al. US PG Pub 2001/0006529 (hereinafter referred to as Komori) according to the previous office action.

11. **For claim 5** the prior art is further applied according to the previous office action.

12. **Claims 11-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawagoe, in view of Nagashima according to the previous office action.

13. **For claim 11**, the prior art is applied according to the previous office action. Nagashima further teaches the region of the second conductivity type (figure 1, label 26) between the regions of the first conductivity type (figure 1, labels 30) shows the region for reducing capacitance is remote from at least a portion of an edge.

14. **For claims 12-13** the prior art is further applied according to the previous office action.

15. **For claim 20**, the argument for claims 17-19 and 21 is applied.

Response to Arguments

16. Applicant's arguments filed 4/30/2008 have been fully considered but they are not persuasive and have been addressed in the rejection above.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Carter whose telephone number is (571) 270-1872. The examiner can normally be reached on Monday-Friday, 7:00 a.m.-4:30 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/MC/

/Minsun Harvey/

Supervisory Patent Examiner, Art Unit 2828